

SmartPTT File Transfer User's Guide

Version 2.0



Introduction

SmartPTT File Transfer was designed to transfer files over-the-air by means of MOTOTRBO radios. It is an easy-to-use and very helpful tool for transferring files of any type and size between two remote users, especially when radio connection is the only available means of communication.

In version 2.0 SmartPTT File Transfer allows receiving files without the server application or control stations. The user needs to have only a radio connected to the PC via USB port and the client application SmartPTT File Transfer version 2.0.

<u>Note:</u> Not all networks support the new scheme of file transfer. It is possible for IP Site Connect only. For other network types use the old file transfer method, i.e. using control stations and the server application SmartPTT File Transfer version 1.0 or 2.0.

Also, the new version allows you to have more than one pair of connected control stations to arrange parallel over-the-air data delivery.

To implement file transfer with SmartPTT File Transfer, two users, the Server (receiver) and the Client (sender), must have:

- In case of SmartPTT File Transfer version 1.0 or networks other than IP Site Connect any of MOTOTRBO radios (DP340X, DP360X, DM340X, DM360X), USB data-cables for programming MOTOTRBO radios, PCs running Microsoft Windows XP SP3 or later.
- In case of SmartPTT File Transfer version 2.0 and IP Site Connect system any of MOTOTRBO radios (DP340X, DP360X, DM340X, DM360X), MOTOTRBO repeater, USB data-cables for programming MOTOTRBO radios, PCs running Microsoft Windows XP SP3 or later.

The schemas below represent both SmartPTT File Transfer methods:

1. Between remote computers with control stations:





2. Between a remote computer and SmartPTT Radioserver (as a Server) with a repeater:

<u>Note:</u> In this configuration, the received file can be viewed in the specified radioserver folder or in the **View Server Files** window in SmartPTT Dispatcher.

This document outlines the necessary steps how to install, configure and use SmartPTT File Transfer.

System Requirements

Minimal Hardware Requirements:

- 1 GHz x86 processor (Pentium 4 or better)
- 512 MB of system memory (RAM)
- 10 MB of hard-drive space
- USB 2.0 port

Operating Systems:

- Microsoft® Windows® XP Service Pack 3 or later
- .NET Framework 4.0

Instalation and Uninstalation

Installing SmartPTT File Transfer

- 1. Before running the installation program, make sure your computer meets the system requirements.
- 2. Run SmartPTT File Transfer Setup.msi to start the installation.
- 3. Follow the on-screen instructions and prompts.

4. The default path for SmartPTT File Transfer is "C:\Program Files\SmartPTT\SmartPTT File Transfer\".

Uninstalling SmartPTT File Transfer

To uninstall SmartPTT File Transfer, use the Microsoft Windows Add/Remove Programs utility, accessible from Control Panel (Start -> Settings -> Control Panel).

Using SmartPTT File Transfer

Before starting to work with SmartPTT File Transfer, you need to configure the radio and software in a proper way.

Note: In this guide, we will consider only those settings which are essential for files transfer.

It is assumed that the MOTOTRBO driver was installed on the user's computer and all the other required settings for radio correct functioning were made earlier.

Here is a simple step-by-step guide how to configure and to start using SmartPTT File Transfer.

File Receive Over-the-Air

To enable receiving files over-the-air the following steps should be taken:

- 1. Configure Client and Server radios with the help of CPS;
- 2. Configure routing settings for file transfer;
- 3. Configure the client application SmartPTT File Transfer 2.0.

Configuring Radio Settings in CPS

Connect one end of the programming Data-cable to the radio and the other end to an available

USB port on your computer. Power up the radio. Run MOTOTRBO CPS.

Steps for Client and Server radio setting up are identical.

- Load the radio configuration either from the file (select File -> Open at the menu bar or press Ctrl+O) or directly from the radio (select Device -> Read at the menu bar or press Ctrl+R).
- 2. Make sure MOTOTRBO CPS opens up in the **Expert View** (if not select *Expert* in the **View** list of the menu bar).
- 3. In the General Settings section of the Tree View, set TX Preamble Duration equal

to	60	ms:

3601				General S	Setting	s
Accessories Buttons	Top Lone V	<u>Microph</u> Norker	hone Passi	Battery Saver	Alerts	Persistent LRRP
Text Messages Telemetry Menu				Radio Name	Motorola	
➡ Privacy Ţ Network] Signaling Systems				Private Calls	n V	
Contacts RX Group Lists Channels		AR:	S Initializ	GPS ation Delay (min)	0 ÷	~
Scan Roam Capacity Plus		Ţ	X Pream	ble Duration (ms) Monitor Type	60 🕂	

4. In the Network section of the Tree View, set Max TX PDU Size equal to 500 bytes:

DP 3601	Network
Accessories	Top Radio Network Services IP Site Connect
🖂 Text Messages 🔟 Telemetry 🔚 Menu	Radio IP 192 . 168 . 10 . Accessory IP 192.168.10.2
Privacy	Netmask 255.255.265.0
	Radio Network
RX Group Lists	CAI Network 12
Enanneis	CAI Group Network
⊞ 📄 Roam ⊞ 💼 Capacity Plus	Max TX PDU Size (bytes) 500 ▼ Telemetry UDP Port 4008 ÷

5. Create a new digital channel:



6. In the created digital channel uncheck the **Data Call Confirmed** option:



 Save changes for the radio configuration. Select Device -> Write at the menu bar or press Ctrl+W.

Configuring Routing Settings for File Transfer

In order to forward packets between Client and Server, a new route item must be added to the routing table, i.e. the IP address of the receiver and the IP address of the sender (gateway) must be specified.

A route table is configured by means of the console command **route.exe**.

Launch C:\WINDOWS\system32\cmd.exe:



To add the route for outgoing data use a command:

route -p add [destination] [mask] [gateway]

-p – key to add a route to regular route list.

add - command to add a rout.

destination – radio IP address.

Note: Radio specified in the destination field must act as a Server Side.

mask - subnet mask.

gateway - source radio IP-interface.

Example:

To send data to Server radio with IP address = 13.0.0.101 (CAI-Network = 12, Radio ID = 101),

through a control station with **IP address** = *192.168.10.1* use the following command:

route -p add 13.0.0.101 mask 255.255.255.255 192.168.10.1



To see a list of permanent routes, type a command *route print* in the command line.

At the bottom of the displayed list permanent routes will be shown:

Administrator: C:\Wind	ows\system32\cmd.exe				
192.168.0.0 192.168.0.169	255.255.255.0	On-link On-link	192.168.0.169	266	*
192.168.0.255	255.255.255.255	On-link	192.168.0.169	266	
	240.0.0.0 240.0.0.0	On-link On-link	192.168.0.169	266	_
255.255.255.255 255.255.255.255	255.255.255.255 255.255.255.255	On-link On-link	127.0.0.1 192.168.0.169	. 306 266	-
Persistent Routes:				======	
Network Address	Netmask	Gateway Address	Metric		
13.0.0.101			·····	======	
					Ψ.

To add a single route record for multiple Servers, a corresponding subnet mask must be used.

Example:

To send data to the server radio with IP address in range *13.0.0.1 – 13.255.255.255* through a control station with **IP address** = *192.168.10.1*, use the following command:

route -p add 13.0.0.0 mask 255.0.0.0 192.168.10.1

To delete a route from the list of permanent routes, the **add** command should be changed to **delete** command.

Example:

route -p delete 13.0.0.101 mask 255.255.255.255 192.168.10.1

Note: If -p key is absent in the typed command, the route will be added to the active route, not

permanent. After the next reboot, the route will not be in the routing table.

SmartPTT File Transfer Settings

SmartPTT File Transfer Settings, relevant for the Receiver Side (Server) and the Sender Side (Client), are explained in the sections **Server Settings** and **Client Settings**, respectively.

Server Settings

- 1. Run SmartPTT File Transfer Server (Start -> Programs -> SmartPTT File Transfer -> SmartPTT File Transfer Server).
- 2. Open SmartPTT File Transfer Server **Settings Menu** (click the **Settings** button in the **Tool Menu**):

🔋 SmartPTT - Fi	le Transfer 2.0 (serv	er)		J
File Service	Settings	9		
Net and statis Packet aceir Packets trans Packets lost:	Save to: CAI network:	C:\Users\SmartPTT 12 Radio ID:	Add	
Session count	Service port: Client timeout (se	5001 🔄 Client List:	Remove	
File Transfer S File name: File size: Progress:				
Ready			OK Cancel	

- 3. Select a received file folder or accept the default one.
- 4. Specify the **Radio ID** and click **Add**. A list of all radios selected for a file transfer session is displayed in the **Client List**:

Settings				×
Save to: CAI network: Service port: Client timeout (sec)	C:\Users\Sr 12 - 5001 - 600 -	nartPTT Radio ID: Client List:	41 225 88 95	Add Remove
				OK Cancel

- 5. Set the same value of the **CAI Network** as specified in the receiving radio configuration (MOTOTRBO CPS).
- 6. If necessary, set the **Service Port** and **Client Timeout** or accept the defaults.
- 7. Click **OK** button to confirm changes.

Client Settings

- 1. Run SmartPTT File Transfer Client (Start -> Programs -> SmartPTT File Transfer -> SmartPTT File Transfer Client).
- 2. Open SmartPTT File Transfer Client **Settings Menu** (click the **Settings** button in the **Tool Menu**):

SmartPTT - File Tran	nsfer 2.0 (client)			
File Service He	lp				
Network tristics		Settings		×	
Packets that putted: Last command name: Last command state:	unknov succes	Preamble (ms)	60	0 waitin	g
File transfer statistics	0	Retries CAI network	10	waitin	g
File name: File size: Transfer progress:	file not unknov	Service port	5001		
Connection managem	ent		ОК	Cancel	
Server ID:	1		Cornie	Disconnect	
Ready		No messages			

3. Specify **Preamble**. Note that its value must be the same as the specified one in MOTOTRBO CPS (see step 3 in <u>Client Radio Settings (MOTOTRBO CPS)</u>).

- 4. Set the same value of **CAI Network** as specified one in the radio configuration (MOTOTRBO CPS).
- 5. Change values of **Service Port** and **Timeout** or accept default values.

Note: Service Port is a port on which Clients receive service data from the Server radio.

Retries is the maximum number of connection attempts.

- 6. Click **OK** to confirm changes.
- 7. In the **Connection management** section specify the same values of **Server ID** and port number as for the Server Side.

SmartPTT - File Tra	nsfer 2.0 (client)			
File Service He	lp			
i 💕 🎱 🕨 💷 🔇	P			
Network statistics Packets transmitted: Last command name: Last command state: Retry	0 unknown success 0	Packets received Packets lost: Current state: Last state:	0 0 waiting waiting	
File transfer statistics File name: File size: Transfer progress:	file not selected unknown			
Connection managem Server ID:	ent 1 : 5001	Connect Disc	onnect	
Ready	No messages			

File Transfer

1. Set the Server in a ready-to-receive mode. To do that, click the **Run Server** button in the **Tool Menu**.

File Service Help Image: Start server 0 Packets transmitted: 0 Packets lost: 0 Packets received: 0 Packets lost: 0 Packets lost: 0 Session count: 0 Packets lost: 0 File Transfer Statistics File not selected File not selected File size: 0 byte(s), 0 packet(s) Progress: Image: Statistics Image: Statistics Image: Statistics Image: Statistics	🔋 SmartPTT - File Transfer 2.0 (serve	er)		
Network status s 0 Last client statistic Packé Start server 0 Packets transmitted: 0 Packets lost: 0 Packets received: 0 Packets lost: 0 Packets lost: 0 Session count: 0 Packets lost: 0	File Service Help			
File Transfer Statistics File name: file not selected File size: 0 byte(s), 0 packet(s) Progress:	Network status Packe Start server Packets lost: Session count:	0 0 0 0	Last client statistic Packets transmitted: Packets received: Packets lost:	0 0 0
Paady	File Transfer Statistics File name: file not select File size: 0 byte(s), 0 pr Progress:	ed acket(s)		

2. In the Client application, check the connection to the server:

🔳 SmartPTT - File Tra	nsfer 2.0 (client)				
File Service He	lp				
i 💕 🎒 🕨 💷 🔇	₽				
Network statistics					
Packets transmitted: Last command name: Last command state: Retry	0 unknown success 0		Packets received Packets lost: Current state: Last state:	0 0 waiting waiting	
File transfer statistics					
File name: File size: Transfer progress:	file not selected unknown				
Connection managem	ent				
Server ID:	1	: 5001	Connect	sconnect	
Ready	No m	essages			

3. Select files to transfer:

📕 SmartPTT - File Tra	nsfer 2.0 (client)	
File Service He	lp	
i 🚰 🙋 🕨 💷 🔇	P	
Networstatistics Select File to Trans Last command state: Retry	mit own Packet success Currer 0 Last s	ets received 0 ets lost: 0 nt state: waiting tate: waiting
File transfer statistics File name: File size: Transfer progress:	file not selected unknown	
Connection managem Server ID:	ent : 5001 Cc	Disconnect
Ready	No messages	13.0.0.1

4. Click the **Start File Transfer** button:

📕 SmartPTT - File Tra	nsfer 2.0 (client)		X
File Service He	lp		
🖻 🏶 🕨 🚤 🔇	P		
Network statistics		Deducts married 0	
Last comm	Transfer	Packets lost: 0	
Last command state: Retry	success 0	Current state: waiting Last state: waiting	
File transfer statistics			
File name:	File3.docx		
Transfer progress:			
Connection managem	ent		
Server ID:	1 : 5001	Connect Disconnect	
Ready	No messages	13.0.0.1	

The file transfer progress, success or failure for sending/received files are displayed in statistics sections (Network Statistics and File Transfer Statistics).

SmartPTT File Transfer statistical parameters and their description:

Statistical Parameter	Values and Description		
Packets Transmitted	Number of data packets sent		
Packets Received	Number of data packets received		
Packets Lost	Number of lost packets		
Last Command Name	See SmartPTT File Transfer commands table		
Last Command State	Success or Error		
Retry	Number of unsuccessful retries		
Current State	Current Client state		
Last State	Previous session status		
File Name	In-progress file name		

Statistical Parameter	Values and Description
File Size	Transferred file size

SmartPTT File Transfer Commands:

Command Name	Command Description		
PUT_REQUEST_SID	Request for file transmission		
PUT_SLICE_REQUEST_SID	Transfer part of a file to the Server		
GET_LOST_LIST_SID	Request for a lost packet list		
SAVE_TO_FILE_SID	Save received data into the file		
ECHO	When the modifier is added to a Command, this means the Client is waiting for a Command Execution Acknowledgment.		

File transfer stops if:

- A file was successfully transferred.
- File transmission was canceled by the Client (by pressing the **Stop Transmission** button .
- No data was received from the Client during the time period longer than the one specified in the **Timeout** field.

If any of the mentioned events occur, the Client disconnects from the Server and the channel becomes free for the next Client connection.

On the Server Side, you can stop receiving files by pressing the **Stop Server** button

File Receive Without the Server Application or Base Stations

To enable receiving files without the server application or control stations the following steps should be taken:

- 1. Configure SmartPTT Radioserver settings;
- 2. Configure the radio with the help of CPS. See Configuring Radio Settings in CPS;
- 3. Configure routing settings for file transfer on a remote computer. See <u>Configuring Routing</u> <u>Settings for File Transfer;</u>
- 4. Configure the client application SmartPTT File Transfer 2.0.

Configuring SmartPTT Radio Server

To configure the settings, select the **File Receive** menu item in the left settings tree of SmartPTT Radioserver Configurator. At that, the following window opens on the right:



Active – enables the service.

Received File Folder – field to specify the folder name where received files are to be stored.

To apply the changes, save the new settings and restart the radioserver.

SmartPTT File Transfer Settings

Settings for SmartPTT File Transfer Client are similar to the case, when files are transferred over-the-air. SmartPTT File Transfer Server settings are not required since SmartPTT Radioserver acts as a Server.

Launch the client application (Start -> All Programs -> SmartPTT File Transfer -> SmartPTT File Transfer Client):

SmartPTT - File Trar	nsfer 2.0 (client)		X
File Service He	lp		
i 💕 🎯 🕨 💷 🍳	P		
Network statistics			
Packets transmitted: Last command name:	0 Packets received unknown Packets lost:	0	
Last command state: Retry	success Current state: 0 Last state:	waiting waiting	
File transfer statistics			
File name: File size: Transfer progress:	file not selected unknown		
Connection manageme	ent		
Server ID:	: 5001 Connect	Disconnect	
Ready	No messages		

In the **Server ID** field enter the slot ID of the IP Site Connect, which will be used for file transmission. The slot ID is set in SmartPTT Radioserver Configurator, in the **Slot** window:

Settings Rules Monitoring Network Configuration Clie	ent List Log Export/Import Settings
■ ■ Radio Server ■ 2 ² Radio Network Services ■ 2 ³ ARS ■ 1 ³ Coation ■ 7 ³ MS	Slot Active Name Slot 1
- · · · · · · · · · · · · · · · · · · ·	ID 1 CAI Network 12 CAI Network for Groups 225
File Receive Add-on Modules Add-on Modules Event Log Settings G-tim Telephone Interconnect	Emergency Alarm Confirmation Compressed UDP Data Header TX Time-Out Timer, sec 60
Incoming Calls Control Contro Control Control Control Control	Private Call Confirmed Data Call Confirmed Allow Transmit Interrupt
Monitoring Monitoring Settings Settings Settings Settings	Allow Telephone Interconnect Privacy Mode No Encrypt
IP Site Connect 1 IP Site Connect 1 If Groups Slot 2 Groups Groups	Key 1
Capacity Plus Systems	

In the Client application, click the **Connect** button:

📕 SmartPTT - File Tra	nsfer 2.0 (client)				
File Service He	elp				
i 💕 🎒 🕨 💷 🤇	3)				
Network statistics					
Packets transmitted: Last command name: Last command state: Retry	0 : unknown success 0		Packets received Packets lost: Current state: Last state:	0 0 waiting waiting	
File transfer statistics					
File name: File size: Transfer progress:	file not selected unknown				
Connection managem	nent				
Server ID:	1	: 5001	Connect	sconnect	
Ready	No messages	;			

File Transfer

1. In the Client application, check the connection to the radioserver:

📕 SmartPTT - File Trai	nsfer 2.0 (client)				
File Service He	lp				
i 💕 🎯 🕨 💷 🔇	9				
Network statistics					
Packets transmitted: Last command name: Last command state: Retry	0 unknown success 0		Packets received Packets lost: Current state: Last state:	0 0 waiting waiting	
File transfer statistics File name: File size: Transfer progress:	file not selected unknown				
Connection managem	ent				
Server ID:	1	: 5001	Connect	connect	
Ready	No n	nessages			

2. Select files to transfer and click the **Start File Transfer** button **>**. File transfer from the radio to the radioserver will be started. In the **Current State** field (highlighted in yellow below) the "File transfer" message will be shown.

📕 SmartPTT - File	Transfer 2.0 (client)		
File Service Help			
i 📂 🥘 🕨 💷 🔇)		
Network statistics Packets transmitted: Last command name: Last command state: Retry	2 PUT_SLICE_REQUEST_SID success 1	Packets received Packets lost: Current state: Last state:	1 1 File transfer Waiting
File transfer statistics File name: File size: Transfer progress:	Test1.xlsx 8827 byte(s), 21 packet(s)		
Connection managem Server ID:	ent 1	: 5001 Connect	Disconnect
Wait server	File transfer	13.0.	0.1

When the file transfer is over, in the **Current State** field (highlighted in green below) the "File Transferred" message will be shown.

Received files can be viewed in SmartPTT Dispatcher. To do this, expand the **Service** menu in the SmartPTT Dispatcher window **Main Menu** bar and click **View Received Files**. At that, the following window opens up:

Current Radioserver: Radio	server_1	-	Retrieve File	List		
File name	Radio		Date/Time	Size (Bytes)	Radioserver	P
Report03_05.txt	123		9/24/2012 5:33 PM	3	Radioserver_1	
Report01_04.txt	95		8/20/2012 12:56 PM	3	Radioserver_1	
MIB.htm	95		2/4/2013 11:12 AM	3985	Radioserver_1	
111.ctb	95		2/4/2013 4:10 PM	29755	Radioserver_1	
Retr 174.ctb	95		2/4/2013 5:16 PM	29652	Radioserver_1	

Troubleshooting

If you run into a problem, which can occur during file transmission, refer to the troubleshooting table below.

Problem	Probable Cause	Solution
Unable to transfer file –	Values of ID and CAI-address	Check Client and Server
the status in the status line	were set incorrectly.	settings (CAI-address ,
is "No response from		Client ID, Server ID)
server".	Server radio is off or not	Check the "server radio -
	accessible.	PC" connection
	Client ID is not included in the	Make sure that the Client
	server list of clients permitted	is included in the server list
	to transfer.	of permitted clients.

Technical Support

To receive extensive technical support, please contact our Customer Support Service:

E-mail: support@smartptt.com

Tel.: +7 (3822) 522-511

List of Terms and Abbreviations

Client – SmartPTT File Transfer application that sends files.

Server – SmartPTT File Transfer application that receives files.

MOTOTRBO CPS – *Customer Program Software* – a software tool for programming MOTOTRBO radios.

- **UDP** User Datagram Protocol.
- CAI Network Common Air Interface Network.